

a light source optically coupled to the waveguide in order to direct this light therein and to make it interact with the grating,

spectral analysis means provided to analyse the light which has interacted with the grating and to provide a spectrum corresponding to this grating,

acquisition means provided to recover this spectrum, and

electronic processing means provided to correlate, from the spectrum thus recovered, the spectral response of the grating with a value of the refractive index of the medium and to provide this value.

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13. (New) System according to Claim 12, in which the electronic processing means are provided in order to determine the lower and upper envelope curves of the normalized spectrum and the normalized area between these two curves.

14. (New) System according to Claim 12, in which the waveguide comprises a single blazed Bragg grating.

15. (New) System according of Claim 12, in which the waveguide comprises a plurality of blazed Bragg gratings, the spectral analysis means are provided in order to analyse the light which has interacted with the gratings and to provide the spectra corresponding respectively to these gratings, the acquisition means are provided in order to demultiplex, in an optical or digital manner, the spectra thus provided and to discriminate the respective spectral responses of the gratings and the electronic processing means are provided in order to correlate the spectral response of each grating with the value of the refractive index of the medium corresponding to this grating.

16. (New) System according to Claim 12, in which the light source is a broad spectrum source.

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19. (New) System according Claim 12, in which the light source and the spectral analysis means are optically coupled to a first end of the waveguide and means of reflecting the light are provided at the second end of the waveguide, for the purpose of measuring the refractive index by reflection.

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22. (New) System according Claim 12, in which the waveguide is a planar waveguide.

Please amend the Abstract on page 30 as follows:

A refractometer with blazed Bragg gratings. In order to measure the refractive index of a medium, for example a liquid or a gas, the refractometer includes a waveguide having a